

Mineral Industry Surveys

For information, contact:

Donald W. Olson, Abrasives Commodity Specialist
U.S. Geological Survey
983 National Center
Reston, VA 20192
Telephone: (703) 648-7721, Fax: (703) 648-7975
E-mail: dolson@usgs.gov

Nicholas A. Muniz (Data)
Telephone: (703) 648-7980
Fax: (703) 648-7975
E-mail: nmuniz@usgs.gov

Internet: <http://minerals.usgs.gov/minerals>

MANUFACTURED ABRASIVES IN THE FIRST QUARTER 2005

The U.S. Geological Survey (USGS) collects quarterly data on manufactured abrasives through its survey of producers. Manufactured abrasives included in this report are fused aluminum oxide, silicon carbide, and metallic abrasives. Where indicated, Canadian and United States data are combined to protect proprietary information. Except where noted, the quantities cited in this report are in metric units. All unit value calculations in this report are based on unrounded data.

Fused Aluminum Oxide

The total production during the first quarter of 2005 was estimated to be 5,000 metric tons of regular-grade crude fused aluminum oxide with an estimated value of \$1.5 million. Only one company, which operates one plant in Canada, produced fused aluminum oxide. This total production figure has been rounded to the nearest 5,000 tons to avoid disclosing proprietary data.

According to the U.S. Census Bureau, U.S. imports of crude fused aluminum oxide for 2005 through the month of February were 52,500 tons valued at \$14.3 million, or an average of \$272 per ton. About 89% of the imports came from China, 6% from Venezuela, 5% from Canada, and less than 1% from other countries. Imports of crude fused aluminum oxide from China may not all be abrasive-quality material.

There were no reported U.S. imports of refined and ground fused aluminum oxide for 2005 through the month of February.

U.S. exports of fused aluminum oxide for 2005 through the month of February were 2,670 tons. The exports were valued at \$8.87 million, or \$3,320 per ton. Germany received 34% of the exports that were shipped; Canada 21%, Mexico 18%, Japan 11%, Republic of Korea 7%, and others 9%.

The Department of Defense stores fused aluminum oxide in the National Defense Stockpile (NDS), but all of the NDS aluminum oxide has been authorized by law for disposal. During the first quarter of 2005, the Department of Defense did not have any sales of fused aluminum oxide abrasive grain. NDS reported that 8,290 tons of fused aluminum oxide abrasive grain with an estimated value of \$3.1 million remained in the stockpile. The NDS has sold all of the crude fused aluminum oxide in the stockpile (Janet Rollins, Defense National Stockpile

Center, oral commun., May 17, 2005). No further stockpiling of crude fused aluminum oxide by the Department of Defense is anticipated. If the current authorized disposal rate and NDS sales schedules are continued, all of the stockpiled fused aluminum oxide abrasive grain could be sold by the end of 2006.

Silicon Carbide

Abrasive-grade silicon carbide is produced by one company in the United States. The total production during the first quarter of 2005 was estimated to be 10,000 tons of abrasive-grade silicon carbide with an estimated value of \$4.9 million. This total production figure has been rounded to the nearest 5,000 tons to avoid disclosing proprietary data.

Total U.S. imports of crude silicon carbide for 2005 through the month of February were 17,100 tons valued at \$8.55 million; imports from China alone were 16,900 tons valued at \$8.29 million. The average price of imported crude silicon carbide, excluding Chinese crude, was \$1830 per ton; the average price of Chinese crude was \$489 per ton. U.S. imports of refined and ground silicon carbide for the same period were 8,890 tons valued at \$11.2 million, or an average of \$1,260 per ton. During the period, China accounted for 99% of the crude material and 42% of the refined and ground material.

U.S. exports of crude silicon carbide for 2005 through the month of February were reported to be 544 tons with a value of \$861 thousand. Exports of refined and ground silicon carbide were 1,690 tons valued at \$1.66 million. About 86% of the crude material was shipped to, in decreasing order, Norway, Mexico, and Japan. About 92% of the refined material went to, in decreasing order, Canada, Mexico, and France.

The NDS has sold all of the silicon carbide in the stockpile. No further stockpiling is anticipated.

Metallic Abrasives

Metallic abrasives information was collected from 12 companies operating 13 U.S. plants. During the first quarter of 2005, four companies produced 53,100 tons of steel shot and grit, an increase of 15%, compared with the same period in 2004. At least one of the companies produced shot and grit

from reclaimed material. Total first quarter production was valued at \$24.3 million, or an average of \$458 per ton. Total annual production in 2004 was 193,000 tons valued at \$87.8 million; 2003 production was 192,000 tons valued at \$86.2 million; 2002 production was 201,000 tons valued at \$91 million.

Shipments of steel shot and grit in the first quarter of 2005 were 56,400 tons valued at \$27.4 million, or an average of \$486 per ton, compared with shipments during the first quarter of 2004, which were 51,600 tons valued at \$24.4 million for an average of \$473 per ton.

During the first quarter seven companies produced 451 tons

other types of metallic shot and grit (primarily cut wire shot) valued at \$1.46 million.

Imports of all types of metallic shot and grit for 2005 through the month of February were 2,690 tons valued at \$1.99 million for an average of \$742 per ton. Canada was the largest supplier, accounting for 71% of the tonnage imported.

Exports of all types of metallic abrasives for 2005 through the month of February were 3,670 tons valued at \$3.02 million, or an average of \$824 per ton. Shipments to Canada accounted for 47% of the exports; an additional 45% was shipped to Mexico.

TABLE 1
MANUFACTURED ABRASIVES¹

(Metric tons, unless otherwise specified)

Source and product	2004								2005	
	First quarter		Second quarter		Third quarter		Fourth quarter		First quarter	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
United States and Canada, production: ²										
Silicon carbide ³	10,000	\$5,300	10,000	\$5,300	10,000	\$4,900	10,000	\$4,900	10,000	\$4,900
Crude aluminum oxide, regular-grade	(4)	(5)	(4)	(5)	5,000	1,500	5,000	1,500	5,000	1,500
United States, production:										
Steel shot and grit	46,400	21,000	49,100	22,300	50,900	23,200	46,600	21,300	53,100	24,300
Other shot and grit ^{e, 6}	242	783	318	1,040	406	1,360	297	1,070	451	1,460
Total	46,700	21,700	49,400	23,300	51,300	24,600	46,900	22,300	53,500	25,700
United States, shipments:										
Steel shot and grit	51,600	24,400	53,300	24,900	48,900	22,300	45,900	21,100	56,400	27,400
Other shot and grit ^{e, 6}	341	1,260	340	1,250	357	1,290	273	950	480	1,720
Total	52,000	25,700	53,600	26,100	49,300	23,600	46,200	22,000	56,900	29,200

^eEstimated.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Quantities are rounded to the nearest 5,000 tons to avoid disclosing proprietary data; values are estimated.

³Includes materials for metallurgical uses and other applications.

⁴Less than 2,500 tons.

⁵Less than \$500,000.

⁶Includes cut wire shot and reclaimed shot and grit from primary producers.